

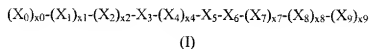
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-18 (canceled)

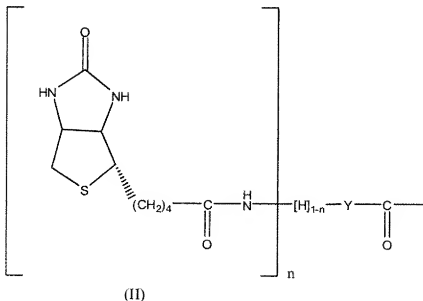
Claim 19 (new): A molecule of general formula (I), and the pharmaceutically acceptable salts thereof:



in which

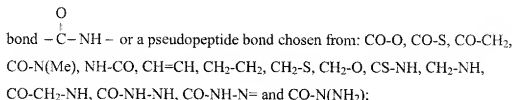
- $x_0, x_1, x_2, x_4, x_7, x_8$ and x_9 each represent, independently, an integer equal to 0 or to 1;

- X_0 represents a group chosen from those corresponding to formula (II):



in which Y represents a saturated or unsaturated, linear, branched or cyclic C_1 - C_{24} alkyl group, n represents an integer chosen from 0 and 1;

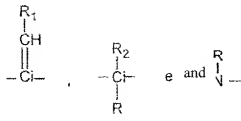
- X₁ and X₃ each represent a natural or synthetic amino acid in the L or D configuration, each comprising at least one hydroxyl function on its side chain;
- X₂ represents a natural or synthetic amino acid in the L or D configuration chosen from those comprising an alkyl side chain;
- X₄ represents a natural or synthetic amino acid in the L or D configuration which can be chosen from those comprising an aromatic side chain;
- X₅ represents an amino acid in the L or D configuration chosen from lysine, arginine, histidine, aspartic acid, asparagine, glutamic acid and glutamine;
- X₆ represents an amino acid in the L or D configuration which can be chosen from tyrosine, phenylalanine, leucine, isoleucine, alanine, *para*-benzoylphenylalanine and lysine;
- X₇ represents an amino acid in the L or D configuration which can be chosen from glycine, alanine, leucine, valine, asparagine and arginine;
- X₈ represents an amino acid in the L or D configuration which can be chosen from proline, valine, isoleucine and aspartic acid;
- X₉ represents an amino acid in the L or D configuration which can be chosen from serine, alanine, lysine, arginine and tryptophan;
- the bond between two successive amino acids X_i-X_{i+1}, denoted q_{i to i+1}, i = 1 to 8 can be a peptide



- the amino acids stated above X_i, i = 1 to 9 being capable of comprising a modification of their α-carbon, denoted C_i, i = 1 to 9 and bearing the side chain R of the amino acid, which modification consisting of the replacement of:



with a group chosen from:



the groups R and CH-R₁ representing the side chain of the amino acid and R₂ representing a C₁-C₆ alkyl group; R-R₂ can constitute a ring,
-the pseudopeptides of the invention also corresponding to the following conditions:

x₀ is equal to 1

or

one of the bonds q_{i to i+1}, i = 1 to 8 is a pseudopeptide bond

or

one of the C_i, i = 1 to 9 comprises one of the modifications stated above.

Claim 20 (new): The molecule as claimed in claim 19, wherein one or more of the following conditions is verified:

at least one of the integers x₀, x₁, x₂, x₄, x₇, x₈ and x₉ is equal to 1;

X₁ and X₃, which may be identical or different, are chosen from threonine and serine;

X₂ is chosen from valine, leucine and isoleucine; or

X₄ is chosen from phenylalanine, tryptophan, tyrosine and *para*-benzoylphenylalanine.

Claim 21 (new): The molecule as claimed in claim 20, comprising 4 to 8 amino acids.

Claim 22 (new): A molecule as claimed in claims 19 to 21, wherein x₀ = 1 and the acyl chain -Y-CO- is a linear chain which is represented by the formula -C_pH_{2p}-CO-, p being an integer ranging from 1 to 23.

Claim 23 (new): The molecule as claimed in claim 22, wherein:

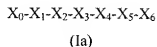
-when n = 1, Y represents -C_pH_{2p}- and p can be 1, 2, 3, 4, 5, 6, 7 or 8; and

-when n = 0, Y represents -C_pH_{2p}- and p can be an integer ranging from 5 to 23.

Claim 24 (new): The molecule as claimed in claim 19, wherein one or more of the following conditions are verified:

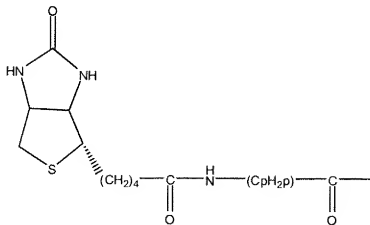
- at least one of X_1 and of X_3 represents threonine,
- X_2 is chosen from isoleucine and valine,
- X_4 is chosen from phenylalanine, tyrosine and *para*-benzoylphenylalanine, or
- at least 2 of the integers $x_0, x_1, x_2, x_4, x_7, x_8$ and x_9 are equal to 1.

Claim 25 (new): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ia):



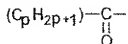
in which the bonds q_i to q_{i+1} between the amino acids X_i and X_{i+1} , $i = 1$ to 5 are peptide or pseudopeptide bonds.

Claim 26 (new): The molecule as claimed in claim 25, wherein X_0 represents:



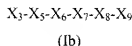
with p ranging from 1 to 8,
 and X_4 represents a *para*-benzoylphenylalanine group.

Claim 27 (new): The molecule as claimed in claim 25, wherein X_0 represents a group:



with p ranging from 3 to 23.

Claim 28 (new): The molecule as claimed in claim 19, wherein the molecule corresponds to formula (Ib):



in which:

-at least one of the bonds between two successive amino acids is a pseudopeptide bond,

or

-one of the α -carbons of one of the amino acids is a modified α -carbon.

Claim 29 (new): The molecule as claimed in claim 19, wherein the molecule is:

$CH_3-(C_nH_{2n})-CO-TVTYDY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TISYDY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TVSYKF$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TITFDY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TITYKF$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TITYEY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TITYDF$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TVTYKL$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TVTYKY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TVTFKF$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TITYDL$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

$CH_3-(C_nH_{2n})-CO-TVTFDY$ with $n=4, 6, 8, 10, 12, 14, 16, 18$;

CH₃-(C_nH_{2n})-CO-TVTFKF with n=4, 6, 8, 10, 12, 14, 16, 18;
CH₃-(C_nH_{2n})-CO-TVTYKF with n=4, 6, 8, 10, 12, 14, 16, 18;
Biot-Ava-TVT-Bpa-KF;
Biot-Ava-TVT-Bpa-KY;
Biot-Ava-TVT-Bpa-KL;
Biot-Ava-TVT-Bpa-DF;
Biot-Ava-TVT-Bpa-DY;
Biot-Ava-TVT-Bpa-DL;
Biot-Ava-TIT-Bpa-KF;
Biot-Ava-TIT-Bpa-KY;
Biot-Ava-TIT-Bpa-KL;
Biot-Ava-TIT-Bpa-DF;
Biot-Ava-TIT-Bpa-DY;
Biot-Ava-TIT-Bpa-DL;
Biot-Ava-TVT-Bpa-EF;
Biot-Ava-TVT-Bpa-EY;
Biot-Ava-TVT-Bpa-EL;
Biot-Ava-TIT-Bpa-EF;
Biot-Ava-TIT-Bpa-EY;
Biot-Ava-TIT-Bpa-EL;
Biot-Ava-TVT-Bpa-NF;
Biot-Ava-TVT-Bpa-NY;
Biot-Ava-TVT-Bpa-NL;
Biot-Ava-TIT-Bpa-NF;
Biot-Ava-TIT-Bpa-NY;
Biot-Ava-TIT-Bpa-NL;
TNL*GPS;
SEK*RVW;
TRA*LVR;
SNL*NDA; or

THI*VIK;

wherein Biot represents a biotinyl group,

Ava represents a δ -aminovaleric acid group,

Bpa represents a *para*-benzoylphenylalanine group; and

wherein * represents:

- a bond chosen from ester, thioester, keto methylene, keto methyleneamino, N-methylamide, inverse amide, Z/E vinylene, ethylene, methylenethio, methyleneoxy, thioamide, methyleneamino, hydrazino, carbonylhydrazone and N-amino bonds, or
- the presence of an aza-amino acid as a substitution for one of the amino acids adjacent to *

Claim 30 (new): The molecule as claimed in claim 19 coupled on its C-terminal end and/or on its N-terminal end with another molecule which promotes its bioavailability.

Claim 31 (new): A composition comprising the molecule as claimed in claim 19 in a pharmaceutically acceptable carrier.

Claim 32 (new): A method for prevention and treatment of a disorder or a pathology associated with proteasome activity comprising administering to an animal in need thereof a molecule as claimed in claim 19.

Claim 33 (new): The method of claim 32, wherein the disorder or pathology is selected from: cancers involving hematological tumors or solid tumors; autoimmune diseases; AIDS; inflammatory diseases; cardiac pathologies; pathologies associated with the consequences of ischemic processes at the myocardial, cerebral or pulmonary level; allograft rejection; amyotrophy; cerebral strokes; traumas; burns; and pathologies associated with aging.

Claim 34 (new): A method for radiosensitizing a tumor comprising contacting the tumor with a compound as claimed in claim 19.

Claim 35 (new): A cosmetic and/or dermatological composition comprising a molecule as claimed in claim 1, in a cosmetically and/or dermatologically acceptable carrier.

Claim 36 (new): A cosmetic process for preventing or treating the appearance of effects of chronological skin aging and/or of photoaging, comprising applying to skin the molecule as claimed claim 19 in a cosmetically acceptable carrier.

Claim 37 (new): The molecule as claimed in claim 21, wherein the molecule comprises 5 to 7 amino acids.

Claim 38 (new): The molecule as claimed in claim 21, wherein the molecule comprises 6 amino acids.

Claim 39 (new): The molecule as claimed in claim 24, wherein at least 3 of the integers x_0 , x_1 , x_2 , x_4 , x_7 , x_8 and x_9 are equal to 1.

Claim 40 (new): The molecule as claimed in claim 26, wherein p ranges from 2 to 6.

Claim 41 (new): The molecule as claimed in claim 27, wherein p ranges from 5 to 19.

Claim 42 (new): The method as claimed in claim 32, wherein the animal is a human.

Claim 43 (new): The method of claim 32, wherein the pathologies associated with aging Alzheimer's disease and Parkinson's disease.

Claim 44 (new): A method for modulating the proteasome of a cell comprising administering the molecule of claim 19 to a cell.

Claim 45 (new): The molecule as claim in claim 19, wherein X_1 and X_3 both represent threonine.